



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231  
www.uspto.gov

APPLICATION NO	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO
09/749,064	12/27/2000	Stephen W. Day	D7751	5643

7590 06/18/2002

JACOX, MECKSTROTH & JENKINS  
2310 Far Hills Building  
Dayton, OH 45419-1575

EXAMINER

VO, HAI

ART UNIT PAPER NUMBER

1771

DATE MAILED: 06/18/2002

2

Please find below and/or attached an Office communication concerning this application or proceeding.

MF-2

**Office Action Summary**

Application No.

09/749,064

Applicant(s)

DAY ET AL.

Examiner

Hai Vo

Art Unit

1771

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_
- 2a) ☐ This action is **FINAL**.      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) 30-38 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 22-26 is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_ is/are rejected.
- 7) ☒ Claim(s) 1-21 and 27-29 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other

## DETAILED ACTION

### *Election/Restrictions*

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-29, drawn to a fiber-reinforced core, classified in class 428, subclass 317.9.
- II. Claims 30-38, drawn to a process of making a composite panel structure, classified in class 156, subclass various.

2. The inventions are distinct, each from the other because of the following reasons:

Inventions II and I are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case, the product as claimed can be made by another and materially different process such as one that forms a core with a plurality of foam strips and each foam strip already has the groove therein so as to eliminate the step of forming resin distribution grooves within the foam strips.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

3. During a telephone conversation with Alan F. Meckstroth on 04/29/02 a provisional election was made without traverse to prosecute the invention of Group I, claims 1-29. Affirmation of this election must be made by applicant in replying to this Office action. Claims 30-38 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

#### ***Specification***

4. The specification is objected to because US Patent No. 5,701,234 disclosed in page 4, line 20 is irrelevant to the consolidation of the fiber wound strips into a single core as set forth in the specification. Correction is required. See MPEP § 608.01(b).

#### ***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 14-17, 19-21 and 27-29 are rejected under 35 U.S.C. 102(b) as being anticipated by Day (US 5,834,082). Day teaches a reinforced foam core panel having opposite sides formed by skins, comprising a plurality of foam boards interposed between opposite skins and plurality of web sheets (figures 35, and

38-40). Day discloses a billet being produced with low density, closed cell foam board (column 5, line 15 and claim 1). Day discloses the thin, porous, fibrous webs being wrapped around each foam pieces forming double layer webs (column 19, lines 46-49). Day teaches the web sheets can be parallel spaced or adjacent porous bundles or rovings of continuous reinforcing fibers attached to one or both faces of the foam boards (figures 38-40, column 7, lines 49-51). Day further discloses the web sheets comprising intersecting filaments held in spaced relation from the core surface in a grid-like structure (figures 35, 38 and 40). With regard to claim 17, Figure 39 of Day shows the foam strip having a triangular cross-sectional configuration. With regard to claim 19, figure 38 of Day reads on the claimed limitations. With regard to claim 20, Day discloses the foam strips formed from polyvinyl chloride (column 2, lines 11-12). With regard to claim 21, Day discloses the webs having protruding thin needle-like composite fibers of sufficient stiffness to penetrate between the fibers of the skins (column 18, lines 53-56). Figure 32 of Day shows that the porous strips **374** extending along the opposite surfaces of the foam core **370**. With regard to claim 27, the web sheet of Day itself is analogous to the row of reinforcing strut of the claimed invention. Day teaches the porous strips being stitched to the skins and being secured to the foam pieces by staples (column 9, line 14 and column 19, lines 51-53). With regard to claim 29, figure 32 of Day shows that the porous strips **374** extending along the opposite surfaces of the foam core **370**. It is the examiner's position that Day anticipates the claimed subject matter.

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1-10, 12, 13 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Day (US 5,834,082) in view of EP 672 805. The page numbers referred below correspond to those of the English translated document of EP 672 805. Day teaches a composite panel structure comprising a foam core **370** interposed between opposite skins **375** wherein a core **370** comprises a plurality of foam strips **376** and each separated by a web **372** (figures 32 and 33, column 16, lines 45-54, column 17, lines 3-13). Day is silent as to a plurality of rows of reinforcing struts extending through the webs and between the opposite core surfaces and struts comprising porous and fibrous rovings enclosed by the foam strips. EP'805 teaches a panel comprising at least two groups 11 of at least one slender body **12** extending between skin components **3, 4** and through the central core **2** (figure 1, page 3). EP'805 teaches the slender body made of a bundle of fibers and being enclosed by the foam core (pages 5 and 6). It would have been obvious to one having ordinary skill in the art at the time the invention was made to form a slender body enclosed by the foam core and extend it through the webs and between the opposite skins of Day motivated by the desire to substantially increase the strength of the panel.

With regard to claims 2, figure 1 of EP'805 shows the slender body extending through the skins.

With regard to claims 3 and 4, Day teaches the web sheet parallel spaced and extending across the board faces at a 45° angle (column 7, lines 41-53). Figures 1 and 2 of EP'805 show that the groups of slender bodies **12** disposed at an acute angle relative to the core surface. Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to form a slender body extending at the right angle to the web in Day motivated by the desire to create structural members that substantially increase the strength of the panel.

With regard to claims 5 and 8, figures 38-41 of Day show that the webs integrally connected and form a continuous corrugated pattern in cross-section through the foam pieces.

With regard to claims 6 and 7, Day discloses the thin, porous, fibrous webs being wrapped around each foam pieces forming double layer webs (column 19, lines 46-49). Day also teaches the web sheets can be parallel spaced or adjacent porous bundles or rovings of continuous reinforcing fibers attached to one or both faces of the foam boards (figures 38-40, column 7, lines 49-51).

With regard to claim 9, Day discloses the webs having protruding thin needle-like composite fibers of sufficient stiffness to penetrate between the fibers of the skins (column 18, lines 53-56), likewise, the fiber-reinforced skins extending across the webs.

With regard to claim 10, figure 35 of Day meets all the limitations of the claim.

With regard to claim 12, Day discloses the foam strips formed from polyvinyl chloride (column 2, lines 11-12).

With regard to claim 13, figure 35 of Day illustrates the presence of internal sheet **399** extending within the core and parallel to opposite core surfaces.

9. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Day (US 5,834,082) in view of EP 672 805, as applied to claim 1 above, further in view of EP 293 612 or Windecker (US 4,196,251). The combination of the primary and secondary fails to teach or suggest a second porous and fibrous layer of the skin component (figure 25). EP'612 teaches a composite structure element having a foam core sandwiched between two opposite skins wherein each skin having two fibrous layers (figures 1 and 2). Windecker teaches a composite structure element having a foam core sandwiched between two opposite skins wherein one of the skins having two fibrous layers (figure 3). It would have been obvious to one having ordinary skill in the art at the time the invention was made to form an additional fibrous in the panel of Day motivated by the desire to impart the strength of the composite panel.

### ***Double Patenting***

10. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686



F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

11. Claims 1-5, 9, and 10 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-10 of U.S. Patent No. 5,834,082 in view of EP 672 805. Claim 1 of U.S. Patent No. 5,834,082 meets all the limitations as set forth in the claims except a plurality of rows of reinforcing struts extending through the webs and between the opposite core surfaces and struts comprising porous and fibrous rovings enclosed by the foam strips. EP'805 teaches a panel comprising at least two groups 11 of at least one slender body 12 extending between skin components 3, 4 and through the central core 2 (figure 1, page 3). EP'805 teaches the slender body made of a bundle of fibers and being enclosed by the foam core (pages 5 and 6). It would have been obvious to one having ordinary skill in the art at the time the invention was made to form a slender body enclosed by the foam core and extend it through the webs and between the opposite skins of Day motivated by the desire to substantially increase the strength of the panel.
- With regard to claims 2, figure 1 of EP'805 shows the slender body extending through the skins.

With regard to claims 3 and 4, claims 1 and 5 of U.S. Patent No. 5,834,082 teaches the web sheet parallel spaced and Figures 1 and 2 of EP'805 show that the groups of slender bodies **12** disposed at an acute angle relative to the core surface. Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to form a slender body extending at the right angle to the web in U.S. Patent No. 5,834,082 motivated by the desire to create structural members that substantially increase the strength of the panel.

With regard to claim 5, claim 8 of U.S. Patent No. 5,834,082 teaches the webs integrally connected and form a continuous corrugated pattern in cross-section through the foam pieces.

With regard to claim 9, claim 3 of U.S. Patent No. 5,834,082 discloses the webs having protruding thin needle-like composite fibers of sufficient stiffness to penetrate between the fibers of the skins, likewise, the fiber-reinforced skins extending across the webs.

With regard to claim 10, claim 4 of U.S. Patent No. 5,834,082 meets all the limitations of the claim.

***Allowable Subject Matter***

12. Claims 22-26 are allowed. The prior art fails to teach or suggest a fiber reinforced core having opposite core surfaces attached to corresponding skins wherein the core comprising a plurality of foam strips and plurality of rows of reinforcing struts extending between opposite core surfaces, each of the struts comprising porous

and fibrous rovings enclosed by the foam material and struts having cut and flared end portions overlying at least one of the core surfaces.


***Conclusion***

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai Vo whose telephone number is (703) 605-4426. The examiner can normally be reached on Monday to Friday, 8:30 to 5:00 (EAST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on (703) 308-2414. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

HV  
June 8, 2002

  
TERREL MORRIS  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1700